Embryonic Stem Cells Generate Model for ALS

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Researchers at the Salk Institute for Biological Sciences have grown embryonic stem cells into the motor neurons and support cells that underlie amyotrophic lateral sclerosis (ALS). Also known as Lou Gherig's Disease, ALS has no cure and no effective treatment. In this disease, the motor neurons slowly degenerate leaving a person paralyzed. Why the neurons die is not known, however the support cells called astrocytes have long appeared to play a role. Now researchers have coaxed embryonic stem cells to form the motor neurons and astrocytes in a lab dish to better understand their relationship in ALS. What they learned is that astrocytes containing a mutation associated with ALS killed off the neighboring motor neurons. This mutation is in a gene that makes a protein whose normal role is to protect the body from damaging oxygen free radicals. When the group grew these same cells in the presence of a powerful anti-oxidant, the motor neurons survived. In addition to understanding the biology of ALS, the group thinks they could use this system to screen drugs that may be able to treat ALS.

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Related Information:Press release, Salk Institute for Biological Sciences, Gage bio

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